

A New *Caecum* from the Sea of Cortez

(Prosobranchia : Caecidae)

BY

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(1 Plate)

IN THE FALL OF 1969, I began an ecological study of Caecidae near the head of the Gulf of California. Dredge samples taken near the mouths of "esteros" in the region of Puerto Peñasco, Sonora, Mexico, yielded dead shells not referable to any known species of *Caecum*. Subsequent samples taken within the marshes have revealed large populations of this organism.

CARPENTER (1857) had discerned within the Caecidae 3 sections based on shell sculpture but reiterated (CARPENTER, 1858, p. 418) his opinion that these groups were useful as identification aids only "... so very gradually do they pass one into the other..." BARTSCH (1920) proposed the recognition of 6 genera within the family - 5 of which are based on the presence or absence, direction, and degree of shell sculpture in the adult shell. The genus *Micranellum* Bartsch was separated from *Caecum* Fleming (= section *Anellum* Carpenter) by the characteristic "Axial rings slender and closely spaced" in the former as opposed to "Axial rings strong and distantly spaced" in the latter. Unfortunately, the wide intraspecific variation and great familial diversity of Panamic Caecidae do not facilitate this separation. In the species here described, annulation may vary from sub-obsolete to fairly prominent rings separated by narrow grooves. This variation exists among individuals of the population and within the ontogeny of the individual. The shape of the posterior plug, or septum, is quite consistent, however, and, as noted by CARPENTER (1857), is a most useful character for specific identification. The genus *Fartulum* Carpenter was characterized by the absence of sculpture "... excepting incremental lines ..." (BARTSCH, 1920, p. 566). However, one species (*farcimen*) described by Carpenter under this heading does develop annuli. Thus, with respect to shell sculpture, no sharp distinction exists between these groups. Perhaps a knowledge of radular and other internal morphology will reveal that decided gaps exist between the groups. After ABBOTT (1954) and at the suggestion

of MOORE (1969) the present author concurs in the subdivision of the family at the subgeneric level.

Caecum (Micranellum) limnetes Long, spec. nov.

Holotype: California Academy of Sciences No. 13617.

Diagnosis: Shell white, arcuated, with close, fine annuli along its length. Plug inflated, almost hemispherical, but with a blunt projection on right dorsal surface.

Description: Teleoconch white, semitransparent, arcuation and diameter increasing only slightly toward the anterior. Annulation variable, consisting of about 40 or more raised, closely appressed rings, separated by fine incised grooves. Septum approximately hemispherical but with a right dorsal irregularity or protuberance rising in a straight line, apically, ending at the level of maximum elevation of mammillate portion of septum. Aperture never constricted. Operculum circular, horny, slightly concave, sinistral; composed of 6 to 8 rings plus a nucleus about $\frac{1}{3}$ the total diameter of the operculum. In younger animals, diameter as well as degree of distinction between annuli increases with growth somewhat more than in older animals.

Body of animal white, semitransparent, with concentrations of black pigment granules on head, beginning just dorsal to eyes and extending dorsally to edge of mantle. Mantle margin and dorsal surface of foot, beneath operculum, also with black pigment granules. Bolsters of radula black, visible through body surface. Both cephalic tentacles blunt, each with about 5 long stiff sensory cilia on tips. Tentacles with ciliated tracts along length. On right tentacle, dorsal tract beats in a proximal direction while ventral tract beats in a distal direction. On left tentacle, the directions of beat for the tracts are reversed. Left tentacle sometimes with an undulated left lateral margin along proximal $\frac{1}{2}$ of length.

Type locality: Estero Choya (31°20'30" N; 113°36'30" W), Sonora, Mexico, near the head of the Gulf of California. Collected 23 October 1970 by Garrell E. Long.

Type material: Holotype CAS 13617; one paratype CAS 13618; single paratypes, AMNH 162063; SDMNH 55551; FMNH 172334; BM(NH) 197012; LACM 1446; 8 paratypes retained by the author: GEL 101 through GEL 108.

Name: The specific name *limnetes*, "marsh dweller" due to the restricted habitat of the species.

Differential Diagnosis: *Caecum (Micranellum) limnetes* may be distinguished from other eastern Pacific caecids by the degree of fine annulation, the extreme prominence and nearly hemispherical (mammillate) profile of the posterior plug, and its restricted habitat.

Caecum (Micranellum) limnetes appears closely allied to the Californian *C. (M.) crebricinctum* Carpenter, 1864, the type species of the subgenus. Each species exhibits close fine annuli and a prominent posterior septum. But the plug of *C. crebricinctum* is prolonged into a spur (mucronate). This species is considerably larger than *C. limnetes* and has been taken from subtidal regions from Forrester, Alaska, south to San Diego, California (Minutes of the Conchological Club of Southern California, 1945). The Panamanian *C. (Fartulum) dextroversum* Carpenter, 1857, exhibits a septum quite similar to that of *C. limnetes* but never exhibits annulation. *Caecum dextroversum* has been taken subtidally near Puerto Peñasco, Sonora, and from Mazatlán.

Discussion: The sparse literature notes no caecid species restricted to marsh habitats. West coast marsh studies (e. g., MacDONALD, 1969) do not record the occurrence of micromollusca less than about 1 mm in diameter.

It is interesting to note that the Panamanian *Caecum (Caecum) firmatum* C. B. Adams, 1852, may be taken from tide levels comparable to that occupied by *C. limnetes*, but *C. firmatum* occurs along exposed sandy beaches rather than in protected back waters. Further, the distri-

bution of *C. firmatum* extends subtidally to depths of 40 m in the region.

At present, the known range of *Caecum limnetes* includes only marsh areas from Bahía Adair, Sonora. It seems likely that the species is represented throughout the Gulf of California but has not been taken elsewhere due to its restricted habitat.

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